WHAT IS CLAIMED IS

1. A music searching apparatus, comprising:

a storing device which stores first chord progression music data for a plurality of music pieces representing chronological changes in chords in the music pieces;

a searching data producing device which produces second chord progression music data representing chronological changes in at least a part of chords in a music piece;

a comparator which compares said second chord progression music data with said first chord progression music data for said plurality of music pieces stored in said storing device on the basis of an amount of change in a root of a chord at a chord transition and an attribute of the chord after the transition, thereby calculating a degree of similarity for each of said plurality of music pieces; and

an output device which produces a search output corresponding to a result of the similarity degree calculation for each of said plurality of music pieces by said comparator.

2. The music searching apparatus according to claim 1, wherein

said comparator sequentially changes a position to start comparison for the first chord progression music data for said plurality of music pieces stored in said storing device so as to compare the first chord progression music data for said plurality of music pieces and said second chord progression music data.

3. The music searching apparatus according to claim 1, wherein

said comparator compares said second chord progression music data with said first chord progression music data for the plurality of music pieces stored in said storing device on the basis of a ratio of time lengths of the chord before and after the chord transition as well as the amount of change in the root of a chord in the transition, and the attribute of the chord after the transition so as to calculate the similarity degree for each of said plurality of music pieces.

4. The music searching apparatus according to claim 1, wherein

said comparator compares said second chord progression music data with the first chord progression music data for said plurality of music pieces stored in said storing device by temporally jumping back and forth.

5. The music searching apparatus according to claim 1, wherein

when a chord after a transition represented by said second chord progression music data, and a chord after a transition represented by said first chord progression music data stored in said storing device have a related key, the comparator regards these chords after the transitions as the same chord.

6. The music searching apparatus according to claim 1, wherein

said second chord progression music data and said first chord progression music data for said plurality of music pieces stored in said storing device each have two chords as first and second chord candidates for each transition point, and

said comparator mutually compares the first and second chord candidates for said second chord progression music data and first and second chord candidates for said first chord progression music data for the plurality of music pieces stored in said storing device.

7. The music searching apparatus according to claim 6, further comprising:

a frequency converter which converts an input audio signal representing a music piece into a frequency signal representing a level of a frequency component at predetermined time intervals for each of said plurality of music pieces;

a component extractor which extracts a frequency component corresponding to each tempered tone from the frequency signal obtained by said frequency converter at said predetermined time intervals;

a chord candidate detector which detects two chords each formed by a set of three frequency components as said first and second chord candidates, said three frequency components having a large total level of the frequency components corresponding to the tones extracted by said component extractor; and

a smoothing device which smooths trains of said first and second chord candidates repeatedly detected by said chord candidate detector to produce said first chord progression music data to be stored in said storing device.

8. The music searching apparatus according to claim 6, wherein

said searching data producing device comprises:

a frequency converter which converts an input audio signal representing a music piece into a frequency signal representing a level of a frequency component at predetermined time intervals;

a component extractor which extracts a frequency component corresponding to each tempered tone from the frequency signal obtained by said frequency converter at said predetermined time intervals;

a chord candidate detector which detects a predetermined number of sets of two chords as said first and second candidates each formed by a set of three frequency components, said three frequency components having a large total level among the frequency components corresponding to the tones extracted by said frequency converter; and

a smoothing device which smooths trains of said first and second chord candidates repeatedly detected by said chord candidate detector to produce said second chord progression music data.

9. A music searching method, comprising the steps of:

storing first chord progression music data for a

plurality of music pieces representing chronological changes in chords in the music pieces;

producing second chord progression music data representing chronological changes in at least a part of chords in a music piece;

comparing said second chord progression music data with said first chord progression music data for said plurality of music pieces stored in said storing step on the basis of an amount of change in a root of a chord in a chord transition and an attribute of the chord after the transition, thereby calculating a degree of similarity for each of said plurality of music pieces; and

producing a search output corresponding to a result of the similarity degree calculation for each of said plurality of music pieces by the comparing step.

10. A computer program product comprising a program for searching a music piece, said searching comprising the steps of:

storing first chord progression music data for a plurality of music pieces representing chronological changes in chords in the music pieces;

producing second chord progression music data representing chronological changes in at least a part of chords in a music piece;

comparing said second chord progression music data with said first chord progression music data for the plurality of music pieces stored in said storing step on the basis of an

amount of change in a root of a chord in a chord transition and an attribute of the chord after the transition, thereby calculating a degree of similarity for each of said plurality of music pieces; and

producing a search output corresponding to a result of the similarity degree calculation for each of said plurality of music pieces by said comparing step.